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IS 4123 (1982): Chain Pipe Wrenches [PGD 5: Assembly Hand Tools]

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AMENDMENT NO. 3 JANUARY 1994
TO
IS 4123 : 1982 SPECIFICATION FOR CHAIN PIPE WRENCHES

(First Revision)

(*Page* 1, *clause* 6) — Substitute the following for the existing:

'The wrenches shall consist of a handle, a set of serrated jaws and a length of leaf chain as shown in Table 1. The leaf chains shall be able to withstand the following breaking load requirements:

Nominal size, mm	50	80	100	150	200	300
Breaking load, daN	3 500	3 500	3 600	4 000	4 500	6 000

(*Page* 2, *Table* 1) — Add the following size and its values in the end of the existing table under respective captions:

Capacity		*L*	*L*1	*E*	*d*	*T*	Chain	
Nominal Size	Range	± 10	*Min*	*Min*	*Min*	*Min*	Length *Min*	Pitch *P* *Min*
300	50-300	1 610	250	105	32	16.5	1350	31.75

(*Page* 3, *Table* 2) — Add the following size and its values under respective captions:

Nominal Size mm	Diameter of Test Bar *d* mm	Torque Nm
300	300	2100

(PE 05)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 2 JUNE 1986

TO

IS:4123-1982 SPECIFICATION FOR CHAIN PIPE WRENCHES

(First Revision)

(*Page 1, clause 6, second sentence*) - Substitute the following for the existing:

'The leaf chains shall be able to withstand the following breaking load requirements:

Nominal Size mm	50	80	100	150	200
Breaking Load N	3 500	3 500	3 600	4 000	4 500

(EDC 12)

Reprography Unit, ISI, New Delhi, India

(First Revision)

Corrigendum

(Page 3, Table 2, last column.) Substitute the following for the existing values:

Torque Nm
300
550
900
1550
1800

AMENDMENT NO. 1 JULY 1984
TO
IS:4123-1982 SPECIFICATION FOR CHAIN PIPE WRENCHES

(First Revision)

Corrigendum

(*Page 3, Table 2, last column*) - Substitute the following for the existing values:

Torque Nm
300
550
900
1550
1800

(EDC 12)

Reprography Unit, ISI, New Delhi, India

UDC 621·883·64

Indian Standard

SPECIFICATION FOR CHAIN PIPE WRENCHES

(*First Revision*)

REAFFIRMED
AUG 2005

Hand Tools Sectional Committee, EDC 12; Spanners and Pliers Subcommittee, EDC 12 : 7 [Ref : Doc : EDC 12 (3648)]

1. Scope — Covers the requirements for chain pipe wrenches.

2. Terminology — For the purpose of this standard, the following definitions shall apply.

2.1 *Nominal Size* — It is the nominal size (outside diameter) of the pipe for which the tool is designed.

2.2 *Capacity* — It is the minimum and maximum outside diameter of the pipe that shall be gripped with safety.

3. Dimensions — Shall be as given in Table 1.

4. Material — Suitable materials meeting with the requirements laid down in **5** and **9**.

Examples:

Component	*Material*
Handle	20C8, 25C4, 25C8 of IS : 1570 (Part II)-1979 'Schedules for wrought steels: Part II Carbon steels (unalloyed steels) (*first revision*)'
Jaws	35C4, 45C8, 50C4, 55C4 of IS : 1570 (Part II)-1979
Bolts	35C4, 45C8 meeting the requirements in accordance with property Class 8.8 of IS : 1367 (Part I)-1980 'Technical supply conditions for threaded fastners (*second revision*)'

5. Hardness

Component	*Hardness*
Jaws	450 *HV* minimum when measured at any point within half the depth of tooth from the root of tooth

6. Construction — The wrenches shall consist of a handle, a set of serrated jaws and a length of leaf chain as shown in Table 1. The leaf chains shall conform to IS : 1072-1980 'Leaf chains, clevises and sheaves (*first revision*).

Two sets of nuts and bolts are required to assemble the above mentioned parts so as to permit their easy disassembly when required.

6.1 *Handle* — The handle shall be one solid piece of the shape as shown in figure under Table 1.

6.2 *Jaws* — The jaw shall be forged to shape and the teeth shall be properly shaped so that they do not slip over the pipe surface under service conditions.

6.3 *Chain* — The leaf chain shall be secured to the handle so that it may be used efficiently and without adjustment when set to grip a pipe in conjuction with the teeth.

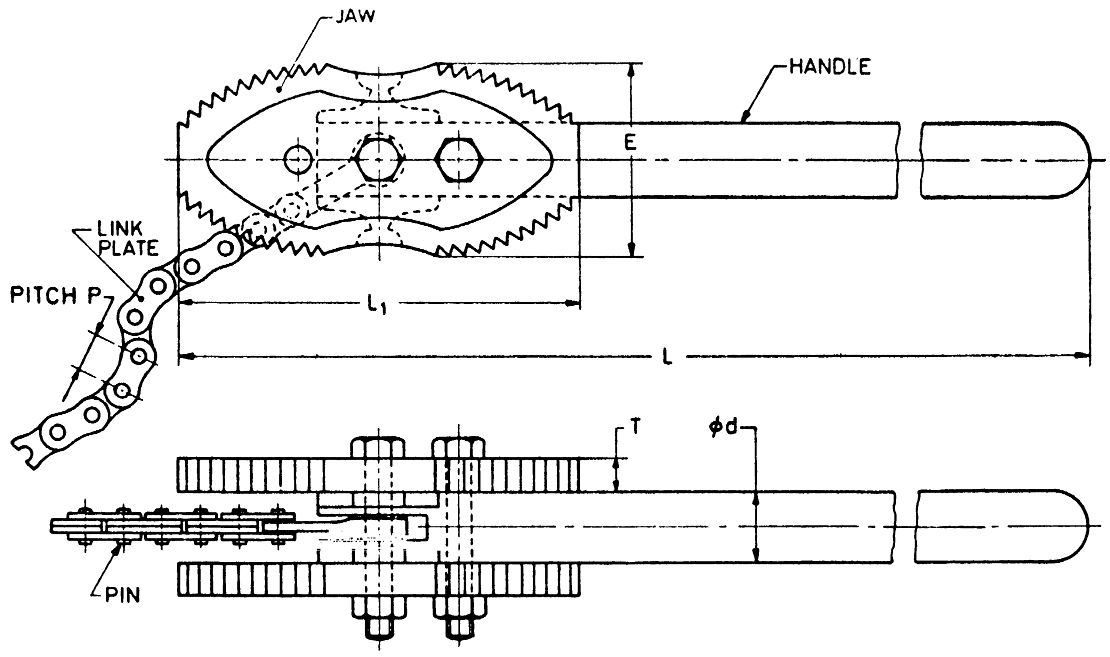
Adopted 27 December 1982 | © February 1983, ISI | Gr 2

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

TABLE 1 DIMENSIONS FOR CHAIN PIPE WRENCHES

(*Clauses* 3, 6 and 6.1)

All dimensions in millimetres.



Capacity		*L*	*L_1*	*E*	*d*	*T*	Chain	
Nominal Size	Range	± 10	*Min*	*Min*	*Min*	*Min*	Length *Min*	Pitch *P* *Min*
50	10 — 60	510	125	55	22	9·5	385	19·05
80	15 — 90	710	150	60	28	11·0	465	19·05
100	27 — 115	920	170	75	28	11·5	565	25·4
150	35 — 165	1 100	180	80	30	13·5	800	25·4
200	50 — 220	1 250	200	85	30	15·0	975	25·4

7. Workmanship and Finish

7.1 The chain pipe wrench shall be free from defects, such as flaws cranks, rust, burrs and other manufacturing defects.

7.2 All unmachined and machined surfaces other than chain shall be either painted or shall be protected by rust preventive treatment. The chain, however, shall be properly greased or lubricated with high viscosity oils.

8. Designation

8.1 The chain pipe wrench shall be designated by its name, capacity and number of this standard.

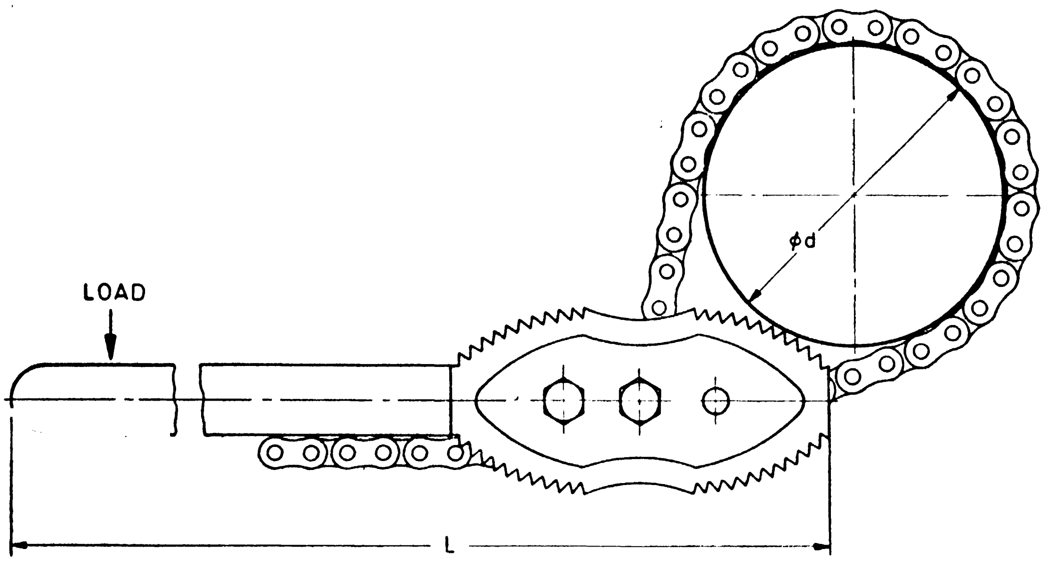
Example: A chain pipe wrench of 200 mm capacity shall be designated as:

Chain Pipe Wrench 200 — IS : 4123

9. Test

9.1 The chain pipe wrench shall be made to grip a test bar, having hardness 240 to 270 *HV* of suitable diameter as shown in Table 2, and properly supported to prevent rotation. The test load shall be applied to the wrench handle near its hand-grip end so as to produce the torque as indicated in Table 2.

TABLE 2 TEST DATA FOR CHAIN PIPE WRENCHES



Nominal Size mm	Diameter of Test Bar *d* mm	Torque Nm
50	50	30
80	80	55
100	100	90
150	150	155
200	200	180

10. Marking — The wrench shall be marked with capacity, maunfacturer's name and/or trade-mark.

10.1 *ISI Certification Marking* — Details available with the Indian Standards Institution.

11. Packing

11.1 Chain pipe wrenches shall be wrapped in waxed paper or polythelene sheet.

12. Sampling

12.1 *Lot* — In any consignment, the wrenches of the same size and manufactured from the same raw material under similar conditions, shall be grouped together to constitute a lot.

12.2 In order to ensure the quality and reliability of the assembly, it is necessary that all its components conform rigidly to the specification requirements. It is recommended that methods given in IS : 397 (Part I)-1972 'Method for statistical quality control during Production : Part I Control charts for variables (*first revision*)' shall be followed during production. Adequate record of testing and inspection carried out during production shall be maintained and produced for the scrutiny of the purchaser.

12.2.1 In case the purchaser is satisfied with the quality control procedure, the conformity of the lot may be ascertained by the procedure given in **12.3**, otherwise the procedure given in **12.4** may be followed.

12.3 For characteristics such as dimensions, workmanship and finish, and manufacture, the single sampling plan with inspection level II and AQL of 4 percent as given in Tables 1 and 2 of IS : 2500 (Part I)-1973 'Sampling inspection tables : Part I Inspection by attributes and by count of defects (*first revision*), shall be followed.

12.3.1 For hardness and tests, the sampling plan corresponding to inspection level I and AQL of 1 percent as given in Tables 1 and 2 of IS : 2500 (Part I)-1973 shall be followed.

12.4 For dimensions, workmanship, finish, manufacture and operation, the sampling plan with inspection level IV and AQL of 1 percent as given in Tables 1 and 2 of IS : 2500 (Part I)-1973 shall be followed.

12.4.1 For hardness and tests, the sampling plan with inspection level II and AQL of 1 percent as given in Tables 1 and 2 of IS : 2500 (Part I)-1973 shall be followed.

EXPLANATORY NOTE

Chain pipe wrenches are generally employed for turning pipes of large diameters. This tool works in one direction only, but may be turned back partly around the work and a fresh hold may taken without forcing the chain. To reverse the operation the grip is taken on the opposite side of the head. The head is double ended and may be reversed when the teeth on one end are worn out.

This standard was first published in 1967. This revision has been brought forward taking due account of the present manufacturing practices prevalent in the country. In this revision the nominal sizes of chain pipe wrenches have been rationalized considering the purpose of the tool for which it has been designed.

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